

## SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Rob Rabago Examiner #: 75055 Date: 1/26/05  
Art Unit: 1713 Phone Number ~~30~~ 272-1109 Serial Number: 10/600,898  
Mail Box and Bldg/Room Location: REM 10C11 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: \_\_\_\_\_

Inventors (please provide full names): \_\_\_\_\_

Earliest Priority Filing Date: See bib sheet attached

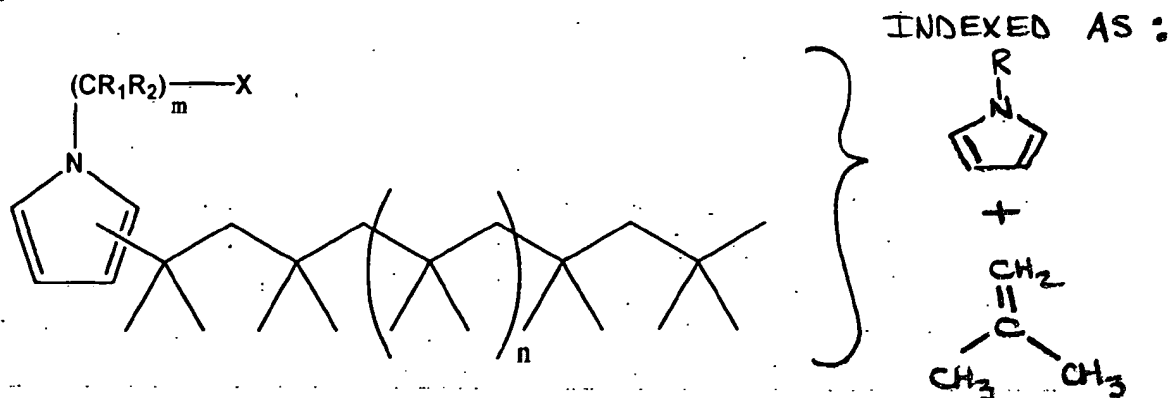
\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

the compound of claim 14

\*\*\*\*\*  
STAFF USE ONLY

	Type of Search	Vendors and cost where applicable
Searcher: <u>EL</u>	NA Sequence (#) _____	STN <u>\$ 220.66</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>(1)</u>	Questel/Orbit <u>1</u>
Date Searcher Picked Up: _____	Bibliographic <u>(and)</u>	Link _____
Date Completed: <u>1-28-05</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>5</u>	Fulltext _____	Sequence Systems _____
Clerical Prep Time: _____	Patent Family _____	WWW/Internet _____
Online Time: <u>80</u>	Other _____	Other (specify) _____

14. A compound of the formula:



wherein:

$R_1$  and  $R_2$  are independently in each  $-(CR_1R_2)-$  unit selected from the group consisting of hydrogen and alkyl from  $C_1$  to  $C_6$  carbon atoms;

$m$  is an integer from 1 to 20; and

$X$  is selected from the group consisting of hydrogen, alkyl, aryl, alkaryl, alkoxy, heteroaryl, nitro, ureido,  $-OC(O)R_3$ ,  $-C(O)R_4$ ,  $-C(O)OR_5$ ,  $-C(O)NR_6R_7$ ,  $-P(R_8)_3$ ,  $-P(OR_9)_3$ ,  $-SR_{10}$ ,  $-OSO_3R_{11}$ , and  $-S(O)R_{12}$ ; wherein  $R_3$  is alkyl or alkenyl; and  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{10}$ ,  $R_{11}$ , and  $R_{12}$  are alkyl; and

$n$  is an integer from 0 to 2000.

15. The compound of Claim 14, wherein  $R_1$  and  $R_2$  are hydrogen.
16. The compound of Claim 15, wherein  $m$  is an integer from 1 to 4.
17. The compound of Claim 16, wherein  $X$  is hydrogen.
18. The compound of Claim 16, wherein  $X$  is heteroaryl selected from the group consisting of furan, thiophene, and pyridine.
19. The compound of Claim 16, wherein  $X$  is  $-OC(O)R_3$  and  $R_3$  is alkenyl selected from the group consisting of ethenyl, *n*-propenyl, and *iso*-propenyl.

=> file reg

FILE 'REGISTRY' ENTERED AT 14:02:27 ON 28 JAN 2005  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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=> d his

FILE 'HCAPLUS' ENTERED AT 13:29:22 ON 28 JAN 2005

L1 3034 S STOKES ?/AU  
L2 2286 S STOREY ?/AU  
L3 18653 S HARRISON ?/AU  
L4 1 S L1 AND L2 AND L3  
SEL L4 1 RN

FILE 'REGISTRY' ENTERED AT 13:29:42 ON 28 JAN 2005

L5 3 S E1-E3

FILE 'HCA' ENTERED AT 13:33:44 ON 28 JAN 2005

L6 11640 S ?POLYISOBUTYLEN? OR POLY(A)ISOBUTYLEN?  
L7 46205 S ?PYRROLE?  
L8 373426 S (REACT? OR RX# OR RXN#) (3A) (PROD# OR PRODUCT? OR ADDUCT  
L9 1 S L6(5A)L8(5A)L7  
L10 1 S L6(25A)L8(25A)L7

FILE 'REGISTRY' ENTERED AT 13:36:07 ON 28 JAN 2005

SEL L5 1 RN  
L11 1 S E4  
SEL L5 2,3 RN  
L12 2 S E5-E6

FILE 'HCA' ENTERED AT 13:37:37 ON 28 JAN 2005

L13 762 S L11/DP  
L14 10 S L12/DP  
L15 1 S L13 AND L14

FILE 'REGISTRY' ENTERED AT 13:38:17 ON 28 JAN 2005

L16 186276 S 16.136.9/RID

FILE 'HCA' ENTERED AT 13:39:08 ON 28 JAN 2005

L17 967 S L16/DP  
L18 1 S L17 AND L13  
L19 69427 S L16  
L20 11561 S L11  
L21 42 S (L19 OR L7) AND (L20 OR L6)

L22 8 S L21 AND L8

FILE 'REGISTRY' ENTERED AT 13:44:13 ON 28 JAN 2005

L23 2067 S 115-11-7/CRN

L24 22 S 9003-27-4/CRN

L25 1 S (L23 OR L24) AND L16

FILE 'HCA' ENTERED AT 13:46:13 ON 28 JAN 2005

L26 1 S L25

FILE 'REGISTRY' ENTERED AT 13:46:17 ON 28 JAN 2005

L27 1 S 115-11-7

FILE 'HCA' ENTERED AT 13:46:29 ON 28 JAN 2005

L28 15848 S L27

L29 148 S L27/DP

L30 0 S L29 AND L14

L31 0 S L29 AND L17

L32 0 S L29 AND L19

L33 105 S L28 AND (L19 OR L7)

L34 97 S L28 AND L19

L35 72 S L28 AND L7

L36 0 S L33 AND L8

L37 QUE REACT? OR RXN# OR RX#

L38 62 S L33 AND L37

L39 2 S L9 OR L10 OR L15 OR L18 OR L26

L40 7 S L22 NOT L39

L41 34 S L21 NOT (L39 OR L40)

L42 62 S L38 NOT (L39 OR L40 OR L41)

L43 33 S L41 AND (1900-2003/PY OR 1900-2003/PRY)

L44 61 S L42 AND (1900-2003/PY OR 1900-2003/PRY)

=> file hca

FILE 'HCA' ENTERED AT 14:02:39 ON 28 JAN 2005

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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=> d l39 1-2 ibib abs hitstr hitind

L39 ANSWER 1 OF 2 HCA COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 142:57228 HCA

TITLE: Living and quasiliving cationic telechelic  
polymers quenched by N-substituted pyrroles and

INVENTOR(S): methods for their preparation  
Stokes, Casey D.; Storey, Robson F.; Harrison,  
James J.  
PATENT ASSIGNEE(S): Chevron Oronite Company Llc, USA; The University  
of Southern Mississippi  
SOURCE: Eur. Pat. Appl., 18 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO: -----	DATE
EP 1489109	A2	20041222	EP 2004-253433	200406 09
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
US 2004260033	A1	20041223	US 2003-600898	200306 19
JP 2005008890	A2	20050113	JP 2004-183066	200406 21
PRIORITY APPLN. INFO.:			US 2003-600898	A 200306 19

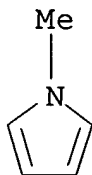
AB Disclosed is a method of prepg. terminally functionalized telechelic polymers using a cationic living polymer product or a terminal tertiary chain end of a carbocationic quasiling polymer product, which comprises quenching the polymer product with an R(CR<sub>1</sub>R<sub>2</sub>)<sub>m</sub>X [R = 1-pyrrolyl; R<sub>1</sub>, R<sub>2</sub> = H or C1-6 alkyl; m = 1-20; X = H, alkyl, alkaryl, alkoxy, heteroaryl NO<sub>2</sub>, ureido, OCOR<sub>3</sub>, C(O)R<sub>4</sub>, CO<sub>2</sub>R<sub>5</sub>, C(O)NR<sub>6</sub>R<sub>7</sub>, P(R<sub>8</sub>)<sub>3</sub>, P(OR<sub>9</sub>)<sub>3</sub>, SR<sub>10</sub>, OSO<sub>3</sub>R<sub>11</sub>, or S(O)R<sub>12</sub>; R<sub>3</sub> = alkyl or alkenyl, R<sub>4-12</sub> = alkyl] (I) to thereby functionalize I at the terminal reactive polymer chain end(s). Also disclosed are the terminal functionalized polyisobutyl-substituted I compds. where the polyisobutyl group is substituted at the 2 and 3 position of I which are useful as fuel additives.

IT 96-54-8DP, 1-Methylpyrrole, reaction  
products with polyisobutylene 1438-94-4DP  
, 1-Furfurylpyrrole, reaction products  
with polyisobutylene 9003-27-4DP,  
Polyisobutylene, reaction N-substituted pyrroles

(living and quasiliving cationic telechelic polymers quenched by  
N-substituted **pyrroles** for fuel additives)

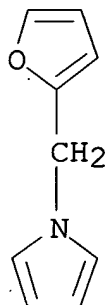
RN 96-54-8 HCA

CN 1H-Pyrrole, 1-methyl- (9CI) (CA INDEX NAME)



RN 1438-94-4 HCA

CN 1H-Pyrrole, 1-(2-furanylmethyl)- (9CI) (CA INDEX NAME)



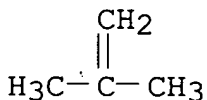
RN 9003-27-4 HCA

CN 1-Propene, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-11-7

CMF C4 H8



IC ICM C08F010-00

ICS C08F004-00; C08F002-38; C08F008-00; C10L001-14

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 51

IT 96-54-8DP, 1-Methylpyrrole, reaction

products with polyisobutylene 1438-94-4DP

, 1-Furfurylpyrrole, reaction products

with polyisobutylene 9003-27-4DP,

Polyisobutylene, reaction N-substituted pyrroles

(living and quasiliving cationic telechelic polymers quenched by N-substituted **pyrroles** for fuel additives)

L39 ANSWER 2 OF 2 HCA COPYRIGHT 2005 ACS on STN  
 ACCESSION NUMBER: 104:34528 HCA  
 TITLE: Polypyrrole graft polymers  
 INVENTOR(S): Naarmann, Herbert; Muenstedt, Helmut; Koehler, Gernot  
 PATENT ASSIGNEE(S): BASF A.-G. , Fed. Rep. Ger.  
 SOURCE: Ger. Offen., 8 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO. -----	KIND ----	DATE -----	APPLICATION NO. -----	DATE
DE 3410494	A1	19851003	DE 1984-3410494	198403 22
EP 157257	A1	19851009	EP 1985-102995	198503 15
R: BE, DE, FR, GB, NL JP 60217221	A2	19851030	JP 1985-50709	198503 15
PRIORITY APPLN. INFO.:			DE 1984-3410494	A 198403 22

AB Conductive graft polymers with good processability and compatibility: are prepd. by autoinitiated polymn. of monomers on anion-doped pyrrole polymers. Thus, 5 parts polypyrrole (elec. cond. 55 S/cm, prepd. by oxidative electropolymn. in the presence of PhSO<sub>3</sub>H dopant) was exposed as a 45- $\mu$ . film to 2 parts iso-Bu vinyl ether at 25.degree. to give a graft polymer, cond. 9 S/cm, contg. 12% vinyl ether and 33% PhSO<sub>3</sub>H.

IT 99836-37-0

(graft, manuf. of elec. cond., by spontaneous polymn.)

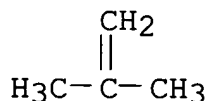
RN 99836-37-0 HCA

CN 1H-Pyrrole, polymer with 2-methyl-1-propene (9CI) (CA INDEX NAME)

CM 1

CRN 115-11-7

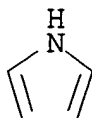
CMF C4 H8



CM 2

CRN 109-97-7

CMF C4 H5 N



IC ICM C08F277-00

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 76

IT 99836-35-8 99836-36-9 **99836-37-0** 99836-38-1

99836-39-2 99836-40-5 99836-41-6

(graft, manuf. of elec. cond., by spontaneous polymn.)

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L40 ANSWER 1 OF 7 HCA COPYRIGHT 2005 ACS on STN

142:94359 End-capped polymer chains and products formed by converting carbo-cationically terminated polymers to anionically terminated polymers. Faust, Rudolf; Mueller, Axel (Scimed Life Systems, Inc., USA). PCT Int. Appl. WO 2004113400 A2 20041229, 36 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (English). CODEN: PIXXD2. APPLICATION: WO 2004-US19774 20040618. PRIORITY: US 2003-PV480121 20030620; US 2004-872134 20040618.

AB Methods are described herein for converting carbo-cationically terminated polymers to anionically terminated polymers. These methods comprise: (a) providing a carbo-cationically terminated



polymeric moiety; (b) reacting the carbo-cationically terminated polymeric moiety with a heterocyclic compd. such as furan, thiophene, 1H-pyrrole and N-alkyl- or N-aryl-substituted pyrrole, thereby providing an end-capped polymeric moiety; and (c) reacting the end-capped polymeric moiety with an organolithium compd. to yield an anionically terminated polymeric moiety. Also described are block copolymers in which a first polymer block comprising cationically polymd. monomers is linked to a second polymer block comprising anionically polymd. monomers by a group (A) derived from the heterocyclic compd., as well as a polymer in which a polymer block comprising cationically polymd. monomers is linked to a halogenated silane residue or a carbosilane residue by A group.

IT 9003-27-4P, Isobutylene polymer  
(end-capped polymer chains and products formed by converting carbo-cationically terminated polymers to anionically terminated polymers)

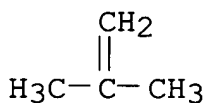
RN 9003-27-4 HCA

CN 1-Propene, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-11-7

CMF C4 H8



IT 9003-27-4DP, Isobutylene polymer, thiophene-terminated compd.  
(end-capped polymer chains and products formed by converting carbo-cationically terminated polymers to anionically terminated polymers)

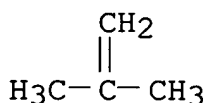
RN 9003-27-4 HCA

CN 1-Propene, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

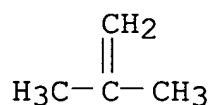
CM 1

CRN 115-11-7

CMF C4 H8



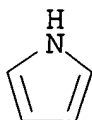
IC ICM C08F008-00  
ICS C08F008-34; C08F008-42; C08F002-38; C08F297-02  
CC 35-8 (Chemistry of Synthetic High Polymers)  
IT **9003-27-4P**, Isobutylene polymer  
(end-capped polymer chains and products formed by converting carbo-cationically terminated polymers to anionically terminated polymers)  
IT 110-02-1DP, Thiophene, **polyisobutylene** terminated with **9003-27-4DP**, Isobutylene polymer, thiophene-terminated compd.  
(end-capped polymer chains and products formed by converting carbo-cationically terminated polymers to anionically terminated polymers)  
IT 220676-16-4P, 2-(1,1,3,3-Tetramethylbutyl)thiophene 816448-11-0P  
(model **reaction product**; end-capped polymer chains and products formed by converting carbo-cationically terminated polymers to anionically terminated polymers)  
  
L40 ANSWER 2 OF 7 HCA COPYRIGHT 2005 ACS on STN  
141:350862 Reactive liquid polymer crosslinking agent and process for preparation. Lazar, Warren G.; Clark, James A. (USA). U.S. Pat. Appl. Publ. US 2004200993 A1 20041014, 18 pp., Cont.-in-part of U.S. Ser. No. 13,164, abandoned. (English). CODEN: USXXCO.  
APPLICATION: US 2004-833816 20040427. PRIORITY: US 2001-13164 20011210.  
AB A reactive liq. crosslinking agent for use in the prepn. of polymeric substances. The crosslinking agent comprises a substituted 1,3,5-triazine reacted with H2O, an acid alkyl sulfonate and/or phosphonate and a solidifying modifier contg. an hydroxyl functional group to form a substituted 1,3,5-triazine hydrate. The reactive liq. polymer crosslinking agent has a solids content between 20-99% solids. The reactive liq. crosslinking agents (RLPC's) are useful as modifiers in the prepn. of polymeric compds. which are suitable for 1-component self-crosslinking adhesives, coatings and polymers used in optics, textiles, composites, casting and molding. RLPC systems contg. from 1-30% RLPC provide fast single package thermosetting polymeric compds. with enhanced properties such as chem., heat and abrasion resistance.  
IT **9003-27-4**, **Polyisobutylene 30604-81-0**,  
**Polypyrrole**  
(reactive liq. polymer crosslinking agent)  
RN 9003-27-4 HCA  
CN 1-Propene, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)  
  
CM 1  
  
CRN 115-11-7  
CMF C4 H8



RN 30604-81-0 HCA  
 CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7  
 CMF C4 H5 N



IC ICM C09K003-00  
 NCL 252182130  
 CC 37-6 (Plastics Manufacture and Processing)  
 IT Polyoxyalkylenes, uses  
     **(reaction products with triazine and sulfate ester or sulfonate; reactive liq. polymer crosslinking agent)**  
 IT 57-50-1D, Sucrose, alkylglycosides, **reaction products with triazine and sulfonylzirconate** 98-11-3D, Phenylsulfonic acid, **reaction products with triazine and diethylene glycol** 107-21-1D, Ethylene glycol, **reaction products with triazine and sulfonyltitanate** 108-78-1D, 2,4,6-Triamino-1,3,5-triazine, **reaction products with phenylphosphoric acid** 110-63-4D, 1,4-Butanediol, **reaction products with triazine and phosphatotitanate** 111-46-6D, Diethylene glycol, **reaction products with phenylsulfonic acid and triazine** 504-63-2D, 1,3-Propylene glycol, **reaction products with triazine and sulfonate** 629-11-8D, 1,6-Hexanediol, **reaction products with triazine and phosphatotitanate** 1571-33-1D, Phenylphosphonic acid, **reaction products with triazine** 5606-17-7D, **reaction products with sulfonate and propylene glycol** 5606-19-9D, **reaction products with polypropylene glycol and sulfate ester** 15214-89-8D, 2-Acrylamido-2-methylpropanesulfonic acid, **reaction products with triazine and polyethylene glycol** 25322-68-3D, Polyethylene glycol, **reaction products with triazine and sulfonate** 25322-69-4D,

Polypropylene glycol, **reaction products** with triazine and sulfate ester 89619-91-0D, **reaction products** with alkylglycosides and sulfonylzirconate 103406-74-2D, **reaction products** with triazine and ethylene glycol 109766-35-0D, **reaction products** with triazine and alkylglycosides 111083-74-0D, **reaction products** with triazine and diol 544651-50-5D, **reaction products** with sulfonate and polyethylene glycol 544651-51-6D, **reaction products** with phosphate ester and polyethylene glycol 544651-52-7D, **reaction products** with phosphotitanate and diol

(**reactive** liq. polymer crosslinking agent)

IT 9002-83-9, Poly(chlorotrifluoroethylene) 9002-84-0, Poly(tetrafluoroethylene) 9002-86-2, Poly(vinyl chloride) 9002-88-4, Polyethylene 9002-89-5, Poly(vinyl alcohol) 9002-98-6 9003-01-4, Poly(acrylic acid) 9003-03-6, Poly(acrylic acid) ammonium salt 9003-04-7, Poly(acrylic acid) sodium salt 9003-05-8, Polyacrylamide 9003-06-9, Acrylamide-acrylic acid copolymer 9003-07-0, Polypropylene 9003-17-2, Polybutadiene 9003-18-3, Butadiene/acrylonitrile copolymer 9003-20-7, Poly(vinyl acetate) 9003-27-4, **Polyisobutylene** 9003-32-1, Poly(ethyl acrylate) 9003-39-8, Poly(vinyl pyrrolidone) 9003-49-0, Poly(n-butyl acrylate) 9003-53-6, Polystyrene 9003-54-7, Poly(styrene-acrylonitrile) 9003-55-8, Styrene/butadiene copolymer 9003-56-9, Acrylonitrile-butadiene-styrene copolymer 9003-70-7, Poly(styrene/divinyl benzene) 9004-74-4, Poly(ethylene glycol) monomethyl ether 9005-08-7, Poly(ethylene glycol) distearate 9005-09-8, Vinyl chloride/vinyl acetate/maleic acid copolymer 9005-64-5, Poly(oxyethylene) sorbitan monolaurate 9008-66-6 9010-75-7, Vinylidene fluoride-chlorotrifluoroethylene copolymer 9010-76-8, Vinylidene chloride/acrylonitrile copolymer 9010-77-9, Ethylene/acrylic acid copolymer 9010-98-4, Poly(2-chloro-1,3-butadiene) 9011-13-6, Poly(styrene/maleic anhydride) 9011-14-7, PMMA 9011-15-8, Poly(isobutyl methacrylate) 9011-16-9, Vinyl methyl ether/maleic anhydride copolymer 9016-00-6D, Poly(dimethylsiloxane), methylsilyl-terminated 9016-06-2, Poly(2-vinylpyridine-n-oxide) 9016-87-9, Poly[methylene(polyphenyl) isocyanate] 9017-27-0 9017-40-7, 4-Vinylpyridine divinylbenzene copolymer 9080-79-9 24936-41-2, Poly(4-methylstyrene) 24936-50-3, Poly(4-bromostyrene) 24936-53-6, Poly(p-iodostyrene) 24937-72-2, Poly(maleic anhydride) 24937-78-8, Ethylene-vinyl acetate copolymer 24937-79-9, Poly(vinylidene fluoride) 24938-67-8, Poly(2,6-dimethyl-1,4-phenylene oxide) 24968-99-8, Poly(vinyl cinnamate) 24979-70-2, Poly(4-vinylphenol) 24979-82-6, Poly(n-propyl acrylate) 24980-41-4, Polycaprolactone 24991-47-7, Poly(4-chlorostyrene) 24991-55-7, Polyethylene glycol dimethyl ether 25014-12-4,

Polymethacrylamide 25014-15-7, Poly(2-vinylpyridine) 25014-31-7  
25034-86-0, Poly(styrene/methylmethacrylate) 25037-45-0,  
Poly(bisphenol a carbonate) 25038-53-3 25038-54-4,  
Polycaprolactam, uses 25038-87-3, Poly(methyl vinyl ketone)  
25053-27-4, Poly(vinylsulfonic acid) sodium salt 25067-05-4,  
Poly(glycidyl methacrylate) 25067-34-9, Ethylene-vinyl alcohol  
copolymer 25067-59-8, Poly(n-vinylcarbazole) 25068-14-8,  
Polyacrolein 25068-26-2, Poly(4-methyl-1-pentene) 25085-35-2,  
Ethyl acrylate/acrylic acid copolymer 25085-53-4 25085-83-0,  
Poly(benzyl methacrylate) 25086-15-1, Methyl methacrylate-  
methacrylic acid copolymer 25086-42-4, Poly(4-aminostyrene)  
25086-89-9, n-Vinylpyrrolidone-vinyl acetate copolymer 25087-26-7,  
Poly(methacrylic acid) 25103-87-1, Poly(1,4-butanediol adipate)  
25119-64-6, Poly(itaconic acid) 25119-83-9, Butyl acrylate/acrylic  
acid copolymer 25134-01-4, Poly(2,6-dimethyl-1,4-phenylene oxide)  
25154-86-3 25189-00-8, Poly(tert-butyl methacrylate) 25189-55-3,  
Poly(n-isopropylacrylamide) 25189-84-8, Poly(acryloyl chloride)  
25190-06-1, Poly(tetramethylene ether glycol) 25212-86-6,  
Poly(furfuryl alcohol) 25213-34-7 25232-41-1,  
Poly(4-vinylpyridine) 25233-30-1, Polyaniline 25248-42-4,  
Polycaprolactone 25249-16-5, Poly(2-hydroxyethyl methacrylate)  
25266-02-8, Maleic anhydride-1-octadecene copolymer 25301-00-2,  
Poly(acrylic anhydride) 25322-69-4, Poly(propylene glycol)  
25608-33-7, Methyl methacrylate-butyl methacrylate copolymer  
25609-94-3, Poly(2-hydroxy-3-methacryloxypropyltrimethylammonium  
chloride) 25639-21-8, Poly(octadecyl methacrylate) 25655-35-0,  
Butadiene/maleic anhydride copolymer 25703-79-1,  
Poly(2-hydroxypropyl methacrylate) 25736-86-1, Poly(ethylene  
glycol) monomethacrylate 25805-17-8, Poly(2-ethyl-2-oxazoline)  
25852-47-5, Poly(ethylene glycol) dimethacrylate 25852-49-7,  
Poly(propylene glycol) dimethacrylate 25988-32-3, Poly(methyl  
isopropenyl ketone) 25988-63-0 26009-03-0, Poly(glycolic acid)  
26062-79-3, Poly(diallyl dimethylammonium chloride) 26099-09-2,  
Poly(maleic acid) 26100-51-6, Poly(dl-lactic acid) 26124-68-5,  
Poly(glycolic acid) 26142-30-3, Poly(propylene glycol) diglycidyl  
ether 26161-42-2 26246-92-4, Poly(lauryl acrylate) 26335-74-0,  
Poly(isobutyl acrylate) 26403-72-5, Poly(ethylene glycol)  
diglycidyl ether 26570-48-9, Poly(ethylene glycol) diacrylate  
26655-84-5, 4-Methylstyrene/styrene copolymer 26655-94-7,  
Poly(isopropyl methacrylate) 26746-07-6, Poly(hexyl isocyanate)  
26780-50-7 26915-72-0, Poly(ethylene glycol) monomethyl ether  
monomethacrylate 26937-45-1, Poly(methacryloyl chloride)  
28474-30-8 28551-45-3, Poly(amyl methacrylate) 28805-15-4,  
Poly(methacrylic acid), ammonium salt 29435-48-1,  
Poly[(-)3-hydroxybutyric acid] 29471-77-0, Poly(2-vinyl-1-  
methylpyridinium bromide) 29500-86-5, Poly(decyl acrylate)  
29690-74-2 29792-49-2, Poly(vinylamine) hydrochloride 30581-59-0  
30604-81-0, Polypyrrole 30729-36-3,

Poly(4-hydroxybenzoic acid) 31245-56-4 31693-08-0,  
 2-Hydroxyethyl methacrylate-methacrylic acid copolymer  
 31900-57-9D, Poly(dimethylsiloxane), methylsilyl-terminated  
 32131-17-2, Poly(hexamethyleneadipamide), uses 34801-99-5,  
 Poly(vinyl ferrocene) 39420-45-6, Poly(propylene glycol)  
 monomethacrylate 50851-57-5, Poly(styrenesulfonic acid)  
 54193-36-1, Poly(methacrylic acid), sodium salt 62962-69-0  
 67665-18-3 68912-04-9 71550-12-4, Poly(allylamine hydrochloride)  
 78274-32-5 82063-35-2 84928-92-7, Poly(3-methylthiophene)  
 86846-19-7, Acrylamidoxime-divinylbenzene copolymer 104934-51-2,  
 Poly(3-octylthiophene) 104983-61-1 105729-79-1, Styrene-isoprene  
 block copolymer 126969-21-9 156309-06-7, Dimethylsiloxane-  
 ethylene oxide block copolymer 178402-40-9 184713-15-3  
 226984-81-2, Butyl acrylate-2-methacryloyloxyethyltrimethylammonium  
 bromide copolymer 391201-84-6, Acrylamide-2-  
 methacryloyloxyethyltrimethylammonium bromide copolymer 776304-98-4  
 (reactive liq. polymer crosslinking agent)

L40 ANSWER 3 OF 7 HCA COPYRIGHT 2005 ACS on STN

141:126396 Conducting hybrid organic-inorganic materials, especially as  
 proton-conducting and polymer-electrolyte membranes in fuel cells.  
 Valle, Karine; Belleville, Philippe; Sanchez, Clement (Commissariat  
 A L'energie Atomique, Fr.). Fr. Demande FR 2850301 A1 20040730, 46  
 pp. (French). CODEN: FRXXBL. APPLICATION: FR 2003-726 20030123.

AB Hybrid org.-inorg. materials consist of two phases: (1) a first,  
 mineral phase consisting of a structured mesoporous network with  
 open porosity, and (2) a second phase consisting of an org.  
 component consisting of an org. polymer, optionally contg. a third  
 phase of a surfactant within the pore interiors. The material  
 consists of the mineral phase dispersed and intermingled within a  
 continuous org. phase. Elec. conducting functional groups on the  
 polymer portion are selected from cation-exchange groups (i.e., acid  
 functionality, such as -SO<sub>3</sub>M, -PO<sub>3</sub>M<sub>3</sub>, -COOM, and -B(OM)<sub>2</sub>, in which M  
 = H or a monovalent metal cation, etc.) or anion-exchange groups  
 (i.e., heterocyclic amino, etc.). The materials are useful as  
 proton conducting membranes or polymer electrolyte membranes for  
 fabrication of fuel cells.

IT 9003-27-4, Polyisobutene 30604-81-0,  
**Polypyrrole**

(conducting electrolytes contg.; conducting hybrid org.-inorg.  
 materials, esp. as proton-conducting and polymer-electrolyte  
 membranes in fuel cells)

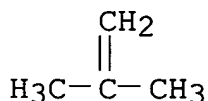
RN 9003-27-4 HCA

CN 1-Propene, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-11-7

CMF C4 H8



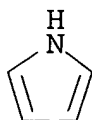
RN 30604-81-0 HCA

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

CMF C4 H5 N



IC ICM B01J047-12

ICS H01M008-10; B01J039-08; B01J041-08

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 49

IT Conducting polymers

(**polypyrroles**, conducting electrolytes contg.;  
conducting hybrid org.-inorg. materials, esp. as  
proton-conducting and polymer-electrolyte membranes in fuel  
cells)

IT Oxides (inorganic), uses  
Rare earth oxides

(**reaction products**, conducting electrolytes;  
conducting hybrid org.-inorg. materials, esp. as  
proton-conducting and polymer-electrolyte membranes in fuel  
cells)

IT Anion exchangers

Cation exchangers

(**reaction products**, membranes; conducting  
hybrid org.-inorg. materials, esp. as proton-conducting and  
polymer-electrolyte membranes in fuel cells)

IT 288-42-6, Oxazole 9002-83-9, Polychlorotrifluoroethylene  
9002-84-0, PTFE 9002-88-4, Polyethylene 9002-89-5, Polyvinyl  
alcohol 9003-05-8, Polyacrylamide 9003-07-0, Polypropylene  
9003-20-7, Polyvinyl acetate **9003-27-4**, Polyisobutene  
9003-39-8, Polyvinyl pyrrolidone 9003-55-8, Butadiene-styrene  
copolymer 9003-95-6, Polyvinyl stearate 24937-79-9,  
Polyvinylidene difluoride 24979-97-3, Polytetramethylene oxide

24991-32-0, Polyvinyl benzoate 24991-33-1, Polyvinyl chloroacetate  
 25035-84-1, Polyvinyl propionate 25038-32-8, Styrene-isoprene  
 copolymer 25068-12-6, Ethylene-styrene copolymer 25087-26-7,  
 Polymethacrylic acid 25120-07-4, Polyhexafluoropropene  
 25189-69-9, Polystyrene oxide 25190-06-1, Polytetramethylene oxide  
 25233-30-1, Polyaniline 25567-89-9, Polyvinyl formate  
 25748-85-0, Polyvinyl trifluoroacetate 26246-91-3, Polyvinyl  
 laurate 26715-88-8, Polyvinyl trimethylacetate 27380-27-4, PEK  
 30398-71-1, Polyvinyl palmitate **30604-81-0**,  
**Polypyrrole** 31694-16-3, PEEK 31762-63-7,  
 Polyhexamethylene oxide 60015-03-4, PEEKK 105809-46-9,  
 Polypyrazole

(conducting electrolytes contg.; conducting hybrid org.-inorg.  
 materials, esp. as proton-conducting and polymer-electrolyte  
 membranes in fuel cells)

IT 1306-38-3DP, Cerium oxide (CeO<sub>2</sub>), **reaction**  
**products** 1308-96-9DP, Europium oxide, **reaction**  
**products** 1312-81-8DP, Lanthanum oxide (La<sub>2</sub>O<sub>3</sub>),  
**reaction products** 1314-23-4DP, Zirconium  
 dioxide, **reaction products** 1314-61-0DP,  
 Tantalum oxide, **reaction products** 1332-29-2DP,  
 Tin oxide, **reaction products** 1344-28-1DP,  
 Aluminum oxide, **reaction products** 7631-86-9DP,  
 Silicon dioxide, **reaction products**  
 12055-23-1DP, Hafnium oxide (HfO<sub>2</sub>), **reaction**  
**products** 12064-62-9DP, Gadolinium oxide (Gd<sub>2</sub>O<sub>3</sub>),  
**reaction products** 13463-67-7DP, Titanium  
 dioxide, **reaction products**

(conducting electrolytes; conducting hybrid org.-inorg.  
 materials, esp. as proton-conducting and polymer-electrolyte  
 membranes in fuel cells)

L40 ANSWER 4 OF 7 HCA COPYRIGHT 2005 ACS on STN

141:126395 Conducting hybrid organic-inorganic materials, especially as  
 proton-conducting and polymer-electrolyte membranes in fuel cells.  
 Valle, Karine; Belleville, Philippe; Sanchez, Clement (Commissariat  
 A L'energie Atomique, Fr.). Fr. Demande FR 2850300 A1 20040730, 45  
 pp. (French). CODEN: FRXXBL. APPLICATION: FR 2003-724 20030123.

AB Elec. conducting hybrid org.-inorg. materials consist of a mineral  
 (inorg.) phase, which form a structured mesoporous network with open  
 porosity. The material consists of oligomers, such as an org.  
 polymer, integrated into the walls (the outer surfaces) and are  
 covalently bonded to the mineral phase, with a possible second phase  
 inside the pores. Further, the materials contain at least a  
 surfactant; at least one of the mineral phases and the oligomers (or  
 org. polymers) present elec. conductive or hydrophilic functions on  
 the pore surfaces. Elec. conducting functional groups on the  
 polymer portion are selected from cation-exchange groups (i.e., acid



functionality, such as -SO<sub>3</sub>M, -PO<sub>3</sub>M<sub>3</sub>, -COOM, and -B(OM)<sub>2</sub>, in which M = H or a monovalent metal cation, etc.) or anion-exchange groups (i.e., heterocyclic amino, etc.). The materials are useful as proton conducting membranes or polymer electrolyte membranes for fabrication of fuel cells.

IT 9003-27-4, Polyisobutylene 30604-81-0,  
Polypyrrole

(conducting electrolytes contg.; conducting hybrid org.-inorg. materials, esp. as proton-conducting and polymer-electrolyte membranes in fuel cells)

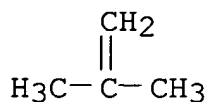
RN 9003-27-4 HCA

CN 1-Propene, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-11-7

CMF C4 H8



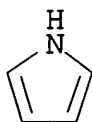
RN 30604-81-0 HCA

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

CMF C4 H5 N



IC ICM B01J047-12

ICS H01M008-10; B01J039-08; B01J041-08

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)  
Section cross-reference(s): 38, 49

IT Conducting polymers

(polypyrroles, conducting electrolytes contg.;  
conducting hybrid org.-inorg. materials, esp. as  
proton-conducting and polymer-electrolyte membranes in fuel  
cells)

IT Oxides (inorganic), uses  
Rare earth oxides

(**reaction products**, conducting electrolytes; conducting hybrid org.-inorg. materials, esp. as proton-conducting and polymer-electrolyte membranes in fuel cells)

IT Anion exchangers  
Cation exchangers

(**reaction products**, membranes; conducting hybrid org.-inorg. materials, esp. as proton-conducting and polymer-electrolyte membranes in fuel cells)

IT 288-42-6D, Oxazole, polymers 9002-83-9,  
Polychlorotrifluoroethylene 9002-84-0, PTFE 9002-88-4,  
Polyethylene 9002-89-5, Polyvinyl alcohol 9003-05-8,  
Polyacrylamide 9003-07-0, Polypropylene 9003-20-7, Polyvinyl  
acetate **9003-27-4**, **Polyisobutylene** 9003-39-8,  
Polyvinyl pyrrolidone 9003-47-8, Polyvinyl pyridine 9003-55-8,  
Butadiene-styrene copolymer 9003-95-6, Polyvinyl stearate  
24937-79-9, Polyvinylidene difluoride 24979-97-3,  
Polytetramethylene oxide 24991-32-0, Polyvinyl benzoate  
24991-33-1, Polyvinyl chloroacetate 25035-84-1, Polyvinyl  
propionate 25038-32-8, Styrene-isoprene copolymer 25068-12-6  
25087-26-7, Poly(methacrylic acid) 25120-07-4,  
Polyhexafluoropropene 25189-69-9, Poly(styrene oxide)  
25190-06-1, Polytetramethylene oxide 25233-30-1, Polyaniline  
25567-89-9, Polyvinyl formate 25748-85-0, Polyvinyl  
trifluoroacetate 25821-66-3, Polyvinyl trichloroacetate  
26246-91-3, Polyvinyl laurate 26715-88-8, Polyvinyl  
trimethylacetate 27380-27-4, Pek 30398-71-1, Polyvinyl palmitate  
**30604-81-0**, **Polypyrrole** 31694-16-3, Peek  
31762-63-7, Polyhexamethylene oxide 60015-03-4, Peekk  
105809-46-9, Polypyrazole

(conducting electrolytes contg.; conducting hybrid org.-inorg. materials, esp. as proton-conducting and polymer-electrolyte membranes in fuel cells)

IT 1306-38-3DP, Cerium oxide, **reaction products**  
1308-96-9DP, Europium oxide, **reaction products**  
1312-81-8DP, Lanthanum oxide, **reaction products**  
1314-23-4DP, Zirconium dioxide, **reaction products**  
1314-61-0DP, Tantalum oxide, **reaction products**  
1332-29-2DP, Tin oxide, **reaction products**  
1344-28-1DP, Aluminum oxide, **reaction products**  
7631-86-9DP, Silicon dioxide, **reaction products**  
12055-23-1DP, Hafnium oxide, **reaction products**  
12064-62-9DP, Gadolinium oxide, **reaction products**  
13463-67-7DP, Titanium dioxide, **reaction products**

(conducting electrolytes; conducting hybrid org.-inorg. materials, esp. as proton-conducting and polymer-electrolyte membranes in fuel cells)

L40 ANSWER 5 OF 7 HCA COPYRIGHT 2005 ACS on STN

139:231607 Composites and composite membranes containing inorganic hydroxides, oxides, or salts. Haering, Thomas; Linkov, Vladimir; Kerres, Jochen; Ullrich, Andreas; Tang, Chy-Ming; Hein, Martin; Zhang, Wei (Universitaet Stuttgart, Germany). PCT Int. Appl. WO 2003072854 A2 20030904, 71 pp. DESIGNATED STATES: W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW; RW: AT, BE, BF, BJ, CF, CG, CH, CI, CM, CY, DE, DK, ES, FI, FR, GA, GB, GR, IE, IT, LU, MC, ML, MR, NE, NL, PT, SE, SN, TD, TG, TR. (German). CODEN: PIXXD2. APPLICATION: WO 2003-DE640 20030221. PRIORITY: DE 2002-10209774 20020228.

AB The invention relates to the following types of composite membranes; composites or composite membranes obtained by adding a metal salt, e.g. from  $ZrOCl_2$ , to a solvent, esp. DMSO, for dissolving one or more polymers in an org. solvent or in aq. systems, in addn. to the subsequent pptn. in the matrix of the thus produced composite-membrane by post-treatment thereof in an acid or in a salt soln., esp. phosphoric acid. The invention also relates to composites or composite membranes obtained by subsequent ion exchange of finished polymer membranes with a suitable salt cation, esp.  $ZrO_2^{2+}$ , wherein the polymer membrane is, optionally, swollen with an org. solvent or a mixt. of org. solvent with water prior to the ion exchange and the subsequent pptn. of a low sol. salt, e.g. from  $Zr_3(PO_4)_4$ , in the membrane by post-treatment thereof in an acid or in a salt soln., esp. phosphoric acid. The invention further relates to composites or composite membranes obtained by adding nano-size  $Zr_3(PO_4)_4$  powder to a polymer soln., composites and composite membranes obtained according to the above-mentioned methods, wherein addnl. heteropoly acids are also incorporated into the polymer or membrane morphol., in addn. to methods for producing said inventive polymers and membranes. Including the inorg. compds. improves the proton cond. of the membranes. Thus, neutralizing 10% NMP soln. of 2.0015 g sulfonated polyether-polysulfone with 10% NMP soln. of 0.8025 g imidazole, adding 9.5% AcNMe<sub>2</sub> of 0.1906 g polybenzimidazole, stirring, adding 10% DMSO soln. of 0.3038 g  $ZrOCl_2 \cdot 8H_2O$ , stirring, coating the resulting soln. on a glass plate, drying at 120.degree., treating 24 h at 70.degree. with 10% NaOH, rinsing with water, treating 24 h with 10%  $H_3PO_4$  at 70.degree., treating 24 h at 70.degree. with water, and drying 3 days at 100.degree. gave a membrane contg. 5%  $ZrO_2$  and 11.1%  $ZrO(PO_3)_2$ .

IT 9003-27-4D, Polyisobutylene, ionic or ionizable derivs. 30604-81-0D, Polypyrrole, ionic or ionizable derivs.

(composite membranes contg. inorg. hydroxides, oxides, or salts

for improved proton cond.)

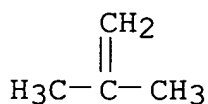
RN 9003-27-4 HCA

CN 1-Propene, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-11-7

CMF C4 H8



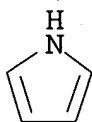
RN 30604-81-0 HCA

CN 1H-Pyrrole, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 109-97-7

CMF C4 H5 N



IC ICM C25B013-00

CC 38-3 (Plastics Fabrication and Uses)

IT Polysulfones, uses

(sulfonated, lithium salts, **reaction products**

, with bis(diethylamino)benzophenone; composite membranes contg.

inorg. hydroxides, oxides, or salts for improved proton cond.)

IT 90-93-7D, 4,4'-Bis(diethylamino)benzophenone, **reaction**

**products** with lithiated sulfonated polysulfones

1122-54-9D, Methyl 4-pyridyl ketone, **reaction**

**products** with sulfonated polysulfones 25734-65-0, Celazole

31694-16-3D, Victrex PEEK, sulfonated 60015-05-6D, Ultrapek

PEKEKK, sulfochlorinated

(composite membranes contg. inorg. hydroxides, oxides, or salts  
for improved proton cond.)

IT 119-39-1D, Phthalazinone, polymers, ionic or ionizable derivs.

9002-88-4D, Polyethylene, ionic or ionizable derivs. 9002-98-6

9003-07-0D, Polypropylene, ionic or ionizable derivs.

**9003-27-4D, Polyisobutylene**, ionic or ionizable

derivs. 9003-53-6D, Polystyrene, ionic or ionizable derivs.

9016-80-2D, Polymethylpentene, ionic or ionizable derivs.

9017-21-4D, Polymethylstyrene, ionic or ionizable derivs.  
 24938-67-8D, Poly(2,6-dimethyl-p-oxyphenylene), ionic or ionizable derivs.  
 24938-68-9D, ionic or ionizable derivs. 25014-15-7, Poly-2-vinylpyridine  
 25038-76-0D, Polynorbornene, ionic or ionizable derivs. 25067-59-8, Polyvinylcarbazole  
 25190-62-9D, Poly-1,4-phenylene, ionic or ionizable derivs. 25232-41-1, Poly-4-vinylpyridine  
 25233-30-1D, Polyaniline, ionic or ionizable derivs. 25667-42-9D, Victrex PES, ionic or ionizable derivs.  
 26353-84-4D, 2,6-Diphenylphenol homopolymer, ionic or ionizable derivs. 26499-97-8D, Poly-1,3-phenylene, ionic or ionizable derivs.  
 26838-51-7D, Poly(.alpha.,.beta.,.beta.-trifluorostyrene), ionic or ionizable derivs. 26838-55-1D, Polypentafluorostyrene, ionic or ionizable derivs.  
 28501-18-0, Poly-3-vinylpyridine  
**30604-81-0D, Polypyrrole**, ionic or ionizable derivs.

(composite membranes contg. inorg. hydroxides, oxides, or salts for improved proton cond.)

L40 ANSWER 6 OF 7 HCA COPYRIGHT 2005 ACS on STN

105:194301 Polymeric compositions, oil compositions containing these polymeric compositions, transmission fluids and hydraulic fluids. Tipton, Craig D.; Grover, Kent B. (Lubrizol Corp., USA). PCT Int. Appl. WO 8603221 A1 19860605, 71 pp. DESIGNATED STATES: W: AU, BR, DK, FI, JP, NO; RW: AT, BE, DE, FR, GB, IT, NL, SE. (English). CODEN: PIXXD2. APPLICATION: WO 1985-US2296 19851120. PRIORITY: US 1984-673686 19841121; US 1985-715428 19850325.

AB Mineral oil-based hydraulic (e.g., automatic and manual transmission) fluids contain an oil-sol. polymer (no. av. mol. wt. 500-100,000, consisting of a nonarom. C>3-alkene homopolymer or a copolymer of the nonarom. alkene with an arom. monoalkene) and a N-contg. ester of a carboxy-contg. polymer derived from .gtoreq.2 monomers, 1 of which is an alkene or vinyl arom. monomer and the other is an .alpha.,.beta.-unsatd. aliph. acid. The N-contg. ester contains (a) C.gtoeq.8 in the ester group, (b) .gtoreq.1 carbonyl-polyamino group derived from a polyamine contg. a primary or secondary amino group, and (optionally) (c) .gtoreq.1 carboxylic ester group contg. a C<7 ester group in a-b-c molar ratio 60-90:2-15:10-30. The additives are effective for viscosity control and shear stabilization. Addnl. components include acrylate pour-point depressants, rust inhibitors, antioxidants, antiwear agents (e.g., P-contg. compds., such as Zn dialkyl dithiophosphates). Thus, a hydraulic fluid was prepd. contg. neutral mineral oil 92.2, polyisobutene (av. mol. wt. 1400) 4.24, and aminopropylmorpholine salt of maleic anhydride-styrene copolymer C14-15-alkyl esters 1.17 wt. parts.

IT 9003-27-4

(automatic transmission fluids contg.)

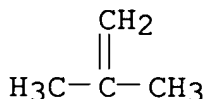
RN 9003-27-4 HCA

CN 1-Propene, 2-methyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-11-7

CMF C4 H8

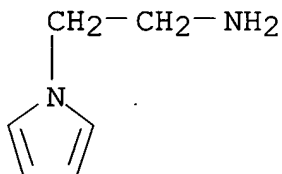


IT 29709-35-1D, compds. with maleic anhydride-styrene copolymer esters

(hydraulic fluids contg.)

RN 29709-35-1 HCA

CN 1H-Pyrrole-1-ethanamine (9CI) (CA INDEX NAME)



IC C10M157-04; C10M157-00; G10M157-04

CC 51-8 (Fossil Fuels, Derivatives, and Related Products)

IT Alcohols, compounds

(C8-18, **reaction products** with maleic

anhydride copolymer and amines, hydraulic fluids contg.)

IT 9003-27-4

(automatic transmission fluids contg.)

IT 108-00-9D, compds. with maleic anhydride-styrene copolymer esters  
 111-87-5D, esters with maleic anhydride-styrene copolymer, compds.  
 with amines 112-53-8D, esters with maleic anhydride-styrene  
 copolymer, compds. with amines 123-00-2D, compds. with maleic  
 anhydride-styrene copolymer esters 123-51-3D, esters with maleic  
 anhydride-styrene copolymer, compds. with amines 140-31-8D,  
 compds. with maleic anhydride-styrene copolymer esters 629-96-9D,  
 esters with maleic anhydride-styrene copolymer, compds. with amines  
 934-98-5D, compds. with maleic anhydride-styrene copolymer esters  
 7728-74-7D, compds. with maleic anhydride-styrene copolymer esters  
 9011-13-6D, esters with C8-18-alcs., compds. with amines  
 25749-86-4D, compds. with maleic anhydride-styrene copolymer esters  
 27431-27-2D, compds. with maleic anhydride-styrene copolymer esters  
 27431-29-4D, compds. with maleic anhydride-styrene copolymer esters  
 29709-35-1D, compds. with maleic anhydride-styrene copolymer  
 esters 61699-88-5D, compds. with maleic anhydride-styrene

copolymer esters 62174-83-8D, compds. with maleic anhydride-styrene copolymer esters 104186-87-0D, compds. with maleic anhydride-styrene copolymer esters 105167-63-3D, compds. with maleic anhydride-styrene copolymer esters 105201-84-1D, compds. with maleic anhydride-styrene copolymer esters 105201-85-2D, compds. with maleic anhydride-styrene copolymer esters (hydraulic fluids contg.)

L40 ANSWER 7 OF 7 HCA COPYRIGHT 2005 ACS on STN

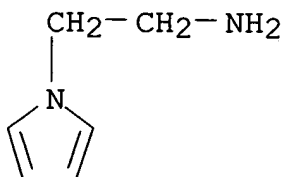
105:117963 Polymeric compositions, oil compositions containing these polymeric compositions, transmission fluids and hydraulic fluids. Tipton, Craig D.; Grover, Kent B. (Lubrizol Corp., USA). U.S. US 4594378 A 19860610, 16 pp. (English). CODEN: USXXAM. APPLICATION: US 1985-715428 19850325.

AB Polymeric compns. for hydraulic fluids and transmission fluids consist of a mixt. of (A) 0.1-20% of .gtoreq.1 oil-sol. polymer (mol. wt. 500-100,000) which is a homopolymer of a nonarom. (C.gtoeq.3) monoolefin or copolymer of a nonarom. monoolefin with an arom. monoolefin, (B) .gtoreq.1 N-contg. ester of a carboxylate polymer partially esterified with C.gtoeq.8 alcs., (C) .gtoreq.1 oil-sol. acrylate polymer of .gtoreq.1 acrylate ester, and (4) 1-90% of .gtoreq.1 viscosity-reducing org. diluent (e.g., a naphthenic oil or other low-temp. synthetic or natural oils). Component B is prepd. from an aliph. olefin (or vinylarom. monomer) and .gtoreq.1 .alpha.,.beta.-unsatd. aliph. carboxylic acid or deriv., which is then reacted with a C.gtoeq.8 alc. and a polyamine. Thus, an automatic transmission fluid was prepd. consisting of **polyisobutylene** (no. av. mol. wt. 900) 35, naphthenic oil 29, seal sweller 1.67, silicone antifoaming agent 1.33, the **reaction product** of a polyisobutenylsuccinic anhydride with polyethylenepolyamine and CS2 9.52, and the **reaction products** of maleic anhydride-styrene copolymer with Neodol 45 C14-15-alcs.) and aminopropylmorpholine 5 wt. parts.

IT 29709-35-1D, compds. with alkyl esters of maleic anhydride-styrene copolymer (oil-based hydraulic-transmission fluids contg.)

RN 29709-35-1 HCA

CN 1H-Pyrrole-1-ethanamine (9CI) (CA INDEX NAME)



IC ICM C08K005-00

ICS C08K005-01  
NCL 524106000  
CC 51-8 (Fossil Fuels, Derivatives, and Related Products)  
ST transmission fluid polymer additive; hydraulic fluid polymer  
additive; **polyisobutylene** transmission fluid polymer  
additive  
IT Alcohols, compounds  
(C8-18, **reaction products** with amines and  
maleic anhydride-styrene copolymer, hydraulic-transmission fluids  
contg.)  
IT 108-00-9D, compds. with alkyl esters of maleic anhydride-styrene  
copolymer 111-87-5D, mixed alkyl esters with maleic  
anhydride-styrene copolymer, compds. with amines 112-53-8D, mixed  
alkyl esters with maleic anhydride-styrene copolymer, compds. with  
amines 123-00-2D, compds. with alkyl esters of maleic  
anhydride-styrene copolymer 140-31-8D, compds. with alkyl esters  
of maleic anhydride-styrene copolymer 629-96-9D, mixed alkyl  
esters with maleic anhydride-styrene copolymer, compds. with amines  
934-98-5D, compds. with alkyl esters of maleic anhydride-styrene  
copolymer 3010-23-9D, compds. with alkyl esters of maleic  
anhydride-styrene copolymer 7728-74-7D, compds. with alkyl esters  
of maleic anhydride-styrene copolymer 9011-13-6D, esters, compds.  
with amines 27431-27-2D, compds. with alkyl esters of maleic  
anhydride-styrene copolymer 27431-29-4D, compds. with alkyl esters  
of maleic anhydride-styrene copolymer **29709-35-1D**, compds.  
with alkyl esters of maleic anhydride-styrene copolymer  
61699-88-5D, compds. with alkyl esters of maleic anhydride-styrene  
copolymer 62174-83-8D, compds. with alkyl esters of maleic  
anhydride-styrene copolymer 104181-73-9D, compds. with alkyl  
esters of maleic anhydride-styrene copolymer 104186-87-0D, compds.  
with alkyl esters of maleic anhydride-styrene copolymer  
104186-88-1D, compds. with alkyl esters of maleic anhydride-styrene  
copolymer 104186-89-2D, compds. with alkyl esters of maleic  
anhydride-styrene copolymer  
(oil-based hydraulic-transmission fluids contg.)

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FILE 'HCA' ENTERED AT 14:02:39 ON 28 JAN 2005

L45 2231 S TELECHEL?  
L46 7646 S (LIVING# OR QUASILIVING#) (2A) (POLYM? OR COPOLYM? OR TER  
L47 0 S (L43 OR L44) AND L45  
L48 0 S (L43 OR L44) AND L46  
L49 0 S (L43 OR L44) AND FUEL?